From Out of "The Ashes" Rises

ZXir QLive Alive!

The Timex/Sinclair NorthAmerican User Groups Newsletter

Volume 4 Number 1 Spring 94

Chairman Donald S. Lambert Auburn, Indiana

MEMORY MAP

Re Up Time!

T/SNUG Information

T/SNUG

Here is the list of T/SNUG Chairmen and how to contact them We wish to support the following SIGs - ZX-80/81, TS-1000, SPECTRUM, TS-2068, TC-2068, Z88 and QL If you have any questions about any of these fine machines, contact the:-

Chairman
Chief Motivator
Don Lambert (ISTUG)
1301 Kiblinger Pl
Auburn IN 46706-3010
219 925-1372

Vice-Chairmen

Tape & JLO PD Library
D G Smith
R 415 Stone St.
Johnstown PA 15906
814 535-6998

Z-88
Dave Bennett (CATS)
329 Walton St. Rear
Lemoyne PA 17045
717 774-7531

QL & ZX-81 Tape
Ed Snow
2136 Churchill Downs Cir
Orlando FL 32825
407 380-5124

RMG Enterprises
Rod Gowen (CCATS)
14784 Qual Grove Cir.
Oregon City OR 97045
503 655-7484

TS-2068
Rod Humphreys (VSUG)
10984 Collins Pl.
Delta BC V4C 7E6 Canada
604 583-2819

BBS/LarKen
Bob Swoger (CATUG)
613 Parkside Cir
Streawood IL 60107-1647
708 837-7957

Treasurer
Newsletter/LarKen PD Library
Abed Kahale (CATUG)
335 W Newport Rd
Hoffman Estates IL 60195-3106

ZXir QLive Alive!

Is the newsletter of T/SNUG, the Timex/Sinclair NorthAmerican User Groups, providing news and software support to the T/S community in at least four newsletters per year; mailed on January, April, August, and October.

Our main goal is to keep the Community alive and to provide help when needed.

It is our goal to build and maintain a Public Domain software library and develop a list of available software for all T/S computers crediting the source

T/SNUG wishes to have one officer from every T/S user group who will take charge of sending us their group's newsletter contents and other correspondence for inclusion in the ZQA! Newsletter.

We encourage your group to copy this newsletter and distribute it at regular meetings to all your members If you cannot copy this newsletter, perhaps we can provide a disk with the articles on it.

You can keep T/SNUG alive for an annual contribution of $10 made payable to Abed Kahale Send check to -

ABED KAHALE
335 W NEWPORT RD
HOFFMAN ESTATES IL 60195-3106
Phone - 708 885-4337

Back Newsletter copies are available for 50¢ each postpaid.

Article Contributions

Send in your articles by tape or disk and your inputs to -

DONALD LAMBERT
ZXir QLive ALive! Newsletter
1301 KIBLINGER PL
AUBURN IN 46706-3010
Phone 219 925-1372

Or by hardcopy, mail to - Abed Kahale (Address on this page)

By BBS - We now have a 24 hour 300 to 2400 BAUD RBBS We encourage you to exchange mail and contribute to the download section.

Call the BBS at

708 632-5558

and register On your next call your security level will be increased to 5 for most of the privileges

Use extension ART for articles, ADS for ads and NWS for news when uploading. Have fun.

For help, contact the SYSOP by leaving a message, mail, E-mail or phone.

Bob Swoger
(Chicago Area Timex Users Group)
613 Parkside Cir.
Streawood IL 60107-1647
H 708 837-7957 W 708 576-8068

Software libraries, write or call the Vice-Chairmen When writing, please enclose a LSASE

Input/Output

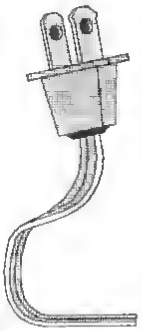
by Abed Kahale

If you have a question or a problem, why not send it to us. We will try to find an answer and we will all share it. Mail to: A. Kahale or D. Lambert. (Addresses are on page 2)

David Lassov of Tucson AZ .- "In response to converting the 2068 to battery power, we should consider what we did 10 years ago in my motor home. We installed an INVERTER, which generate sinusoidal current from DC input. This powered up the AC outlets which, in a motor home, are ordinarily connected to the city lines.

Apparently, higher level consumer electronics require such a current shape, in order to function properly. Otherwise, we could have used a cheap, in-line device, in order to get square wave current in those same AC outlets. We were surprised to find that 30 or 40 hertz current worked just as well as 60 hertz, you know, "50 hertz UK, 60 bertz US".

So, I am wondering if some of my programs, which are not time dependent, wouldn't work just as well in Lancaster UK as in Lancaster PA?"



Your non-time dependent programs will work at the same speed regardless of the line frequency whether it is 40 or 100 hertz. The 'CPU clock' in the computer generates its own frequency (3.5 MHz) and runs off DC. It is not dependent on the line frequency unlike your TV and VCR that do depend on the line frequency for synchronization.

Putting my electrical engineer's hat on, the AC adapter transformer (power supply) is not frequency or wave form dependent, however, the transformer can heat-up and eventually burn if used for an extended period of time at frequencies lower than 50 Hz. These transformers were specifically designed to work with 50-60 Hz AC line. They will work with any repetitive wave form whether it is square, pulse or sinusoidal. As the frequency is lowered, the DC output is lower and the transformer becomes hotter, the opposite is true.

When it comes to appliances, 60 Hz (sinusoidal) is required if the appliance has an induction motor (such as clothes washer, clothes dryers, air conditioners and some transformless electronics). Appliances with series motors (having carbon brushes) such as food mixers and vacuum cleaners do not care about the line frequency or the wave form. *Abed*

I didn't mean to insult your hero

"Dear Sir,

I am a computer hobbyist. I am interested in classic compact computers including the Sinclair and Timex computers. The trouble is, they aren't the only computers of their kind. They're just the only ones I can find support for. What happened to Spectravideo? Or the Mattel Aquarius? Or the TRS-80 MC-10? The idea that the Spectrum was the first computer with color and sound for under $300 is a popular myth. The RCA VIP had color and sound for under $300 in 1980. So did the Protecto Enterprises model "R" level 1.

Where can I find support for these machines? Even the Jupiter Ace is ignored by most Sinclair dealers. Can you tell me where I can get hardware, software, firmware information and other support?

Leon Howell

PS. I didn't mean to insult your hero, by cutting down the Spectrum's reputation. Sir Clive, along with RCA, Netronics, and a very few others, are not ahead of their time, they just aren't behind it like everybody else."

Leon Howell

6150 Monument Dr Apt. D
Grants Pass OR 97526

Leon had requested and was mailed the Winter 1993 ZQA!

Dear Leon,

One of the things I learned. in second year high school science/biology class, is the phrase "**Survival of the Fittest**".

The **dinosaurs** didn't have it in them to survive, they just couldn't **adapt** to the environment and were very inefficient beasts. The earth just couldn't support their feeding habits either. They were not **fit**, man was the **fittest**. Those who cannot **adapt** are history.

Yes, at the time, I saw an ad about the RCA VIP. When I asked the RCA representative that use to call on me about his opinion, knowing that I was looking for an affordable home computer, he confidentially said; "You don't really want this one! it is an abortion!" I never heard of the Protecto nor the Netronics, apparently they just were not **fit** to survive. There is still some support for other *winners* like the Tandy, Color Computer 'CoCo' and TI-99. I am afraid that I can't help you with the others, may be one of our readers might know about their history Anyone out there?

Timex takes a LOLICing and keeps on frolicking.
It is said that this is the motto of a SIG - LOLIC (Li'le Ol' Ladies In Computing) that was started by Joan Kealy of Brackettville, Texas

When the TS-2068 (a refined version of the Spectrum) became available in 1983 for less than $200 (I paid $150), its competitors (Texas Instruments, Commodore and Hewlett Packard to name a few) at the time were selling upward from $600. To set the records straight, the Spectrum was offered in the UK for £125, it had a BEEP and not a three channels sound chip + BEEP that the TS-2068 has. The ZX-80 was the first computer under $100, I bought mine in 1979. The TS-2068 offered more value and features for the dollar and was easy to **adapt** to. The Timex Co was not **fit** in the computer world.
Here are CoCo's addresses:

DAVE BARNES
P O BOX 281
LAKE VILLA IL 60046

G McLEARY
201 - 2512 1ST AVE NW
CALGARY AB T2N OC2 CANADA

Ed.

[Leon, I didn't remember some of the machines you mentioned so I asked some of the older Motorola computer club members about them. Those that remembered them stated that they were not considered for ownership because they were so out classed by the Radio Shack Color Computer (CoCo) which came out in 1978. Those you have mentioned were all considered high priced junk and only showed up occasionally in the Chicago area at Toys R Us! The Radio Shack store managers in the Chicago area would only stock one or two TRaSh-80 MC-10s (a rip-off of the TS1000) knowing they would not sell. For this reason you can not find support for those other machines, people just don't form user groups to support machines that can't fill their needs

If SOUND means to you that the machine had an internal speaker, OK but it was only the Timex/Sinclair 2068 in 1983 that had both a programmable sound chip and a speaker Macintosh in late 1984 was the second, I believe

As for the Spectrum itself, I have never seen one here in the Chicago area but our TS2068s can run all the Spectrum software just fine

The legacy that Clive left us was a machine under $100 for people with "EMPTY COAL BUCKETS AT HOME" These machines didn't give us "SYNTAX ERROR"s or "ABORT? RETRY? FAIL?" on the screen all the time, as the others did, his machines alone understood DARTMOUTH BASIC, 'the original BASIC" rather than the corrupted Microsoft version!]
--==(GATOR)==--

Miracle in Newport
2nd Time Around

On Saturday, May 14th, 1994, IQLR (International QL Report) will be sponsoring the second annual North American QL/QDOS get together. It will once again be held at the Salvation Army Building on Memorial boulevard in Newport, Rhode Island to the best of our present knowledge.
For more information call Bob Dyl at 401 849-3805.

From UPDATE Magazine

David Lassov of Tucson AZ - "Thank you, for continuing to promote the proper care and feeding of Timex/Sinclair machinery.

Your PD Software Library is outstanding, especially the programs by Wes Brzozowski His articles mentioned the work on 64-character PRINT, without using a cartridge or special ROM, only the two display files. Well, **his PROPORTIONAL PRINT looks great.** They are programs 20178 through 20180.

Unfortunately, Disk # 6 got left out, including PIXEL PRINT PLUS, STING GRAPHICS, QRLLKDOS, and RLE GRAPHICS

KEEP ON TIMEX'n ! ! ! ! ! ! ! ! ! ! ! !

System Oriented Languages Corp.
2590 N. Jordan Dr
Tucson AZ 85745-1132"

We thank you for the complements

I have to apologize for listing Disk #6 in the Fall 93 issue of ZQA! before actually receiving the disk(s). It turned out to be 4 disks and the QRL LKDOS and the RLE could not be located. Now that I have the disks, please see the description of disks #6 through #9 in the Winter 93 issue of ZQA! .[PIXEL PRINT & STING GRAPHICS were mailed to him] Abed

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Dr. D. H. Williamson of Halifax NS Canada:- "I would like to thank you and to thank a number of other people in both Canada and the US that responded to my inquiries [*in UPDATE! Magazine*] about upgrading my TS-2068 computer. Bon Chance. (*Good Luck*)"

Letter that was forwarded to me by Electronics Now Magazine.-

"In the January 1994 issue of Electronics Now, there is a letter by Abed Kahale, The Timex/ Sinclair North American User Groups, the letter did not have a mail delivery address.

I would like to contact Mr. Kahale about help in locating software for my own Sinclair TS-1000 computer (specifically a CW - Morse code receiving program) if you can give me his address If your Magazine forbids this, please pass this letter on to Mr. Kahale."

Gene Ray WD4GUA
2388 Hwy 36E
Milner GA 30257

E-mail from Bob Swoger K9WVY

[One would need an XR-2211 phase-lock loop chip to decode the CW from a four to eight ohm speaker. This chip is available from:

EXAR Integrated Systems, Inc.
750 Palomar Ave.
Sunnydale CA 94086
408-732-7970

Other tone detectors would be possible. A program I wrote for the TS2068 could decode the CW. My program decoded the joystick fire button, the TS1000 would have to decode something else.

I will have to find some other literature to solve the problem in my home library]

--==(GATOR)==--

Another source would be :-

Alex F Burr K5XY
2025 O'Donnell Dr
Las Cruces NM 88001

Alex publishes QZX newsletter "The Journal Covering Amateur Radio & Sinclair Computers". Bob Swoger's address on page 2

Abed

D. G. Smith of Johnstown PA - "Where can one get those blank labels for cassettes?"

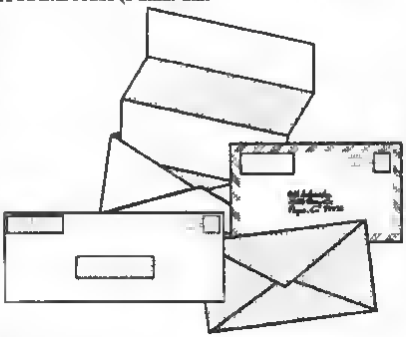
There are AVERY labels that should do the job for cassettes, they are AVERY numbers 4255 thru 4266. The size is .44" X 3.5", they are called "File Folder Labels" and are available in rolls for dot matrix tractor feed. Another possible: AVERY LSK-3 Index Markers for laser printers, size .5" X 3.13" in 20 per sheet.

TAPE WORLD
220 SPRING ST BOX 361
BUTLER PA 16003-0361

May have the labels with the hole! Ed.

Wayne Knaust :- "Don, Just a note to wish you a Happy New Year and all that. I have a few needs:

1. I want to buy a 64K RAMPACK (I think that I want a Memopak but I'm not terribly particular). Know of any? Cost? *[Contact Mechanical Affinity. See ad in this issue.]*



2. I just acquired a 2068 computer and would like to know if Hot Z, Debugger, Assemblers exist for the animal? I have all these but they are for the TS-1000. *[See RMG & Mechanical Affinity ads.]*

I am planning on sending you a potential article on my episodes with the TS-1000 centered around the 32K RAMPAK by Memopak (which was not a good choice). Interested?

I have a lot of Utilities software that I have played with and fixed. Like:

64K version of QSave that VERIFYs

ZXDB with additional commands

ZXDB that will locate itself anywhere (well almost anywhere) in core and work not at 16K to 20K.

Are there any of the old 81-83 companies in business, like SINWARE, Bob BERCH, ZEBRA etc. *[I am afraid not]*

I know I ask a lot of questions, if you like just write any answer in the margins and return this letter. Thank you for any assistance you might be able to give.

PS. Just one more — I am interested in getting a Hunter Board 8K to 16K NV memory for the TS-1000. Any ideas?"

WAYNE KNAUST
2 PEAR TREE CT.
ST. PETERS MO 63376

Help!

Richard Jelen :- "Just got interested again the QL systems I've had stored away since '87-'88 as the heat problems experienced earlier made me leery of depending on the QL system for fun or otherwise. I dragged my old systems out and had to replace the keyboard overlay on one and both worked fine. I am trying to get info. on QL heating modes etc."

R. A JELEN
11443 ISLAND RD.
GRAFTON OH 44044

[See article "QL Woes" by Nazir Pashtoon]

Rod Gowen writes: I have sent out copies of the LogiCall disks that you sent me to all who have requested them and the users are quite impressed with the new version They thank you!

[Thanks for the kind words, Rod.]

—==(GATOR)==—

Robert Shade writes: Please send me all listings of TS-2068 (TIMEX & Spectrum) programs now available in the ZQA Library. All types of programs, games, business, education, graphics, utilities, etc.. I'm interested in acquiring any and all interesting programs

[Your request has been passed on to Abed Kahale as he can respond much faster to your request. Don't forget to check with Rod Gowen and Frank Davis as to what they have in inventory, we really must keep our venders Alive! Also]

—==(GATOR)==—

Welcome back to our community Bob [He was mailed the Winter 93 issue that had tha complete listing.] (Ed.

Dave Lassov writes: Thank you for your efforts to keep alive Sir Clive's dream of eight-bit computers. Your coding ideas have saved vast amounts of both time and space in the developed version of Daisy; thousands of bytes and drastic reductions in the delay between computation and line printing. INDEED, there is only a slight delay, due to massaging the line of characters prior to PRINT, since we like BOTH left column AND right column justification.

[Fine business on the elegance of our eight-bit machines. You also are beginning to realize what Sir Clive meant when he reportedly responded to the question of why he chose the Z80 for the Z88 laptop with "I couldn't fine a four-bit processor I liked!" The Z80 has elegant enough architecture for the tasks we require it to do. I am finding that the NEWER machines take more time to get my tasks done and at a higher cost than my TS2068!]--==(GATOR)==--

Gil Parrish writes: Don Lambert had mentioned in recent correspondence that he actually has two spectrum EPROM chips: one a LarKen EPROM fitted in the LarKen DOCK board, the other a Russell EPROM installed internally with a red switch to change from 2068 Mode to Speccy mode. He asked which type I had, since he believes each ROM seems to do better on different pieces of software. I indicated I had a third type, being an EPROM labeled Spectrum V2 FCDB fitted on a Zebra Systems DOCK board. Can you shed further light on this?

*[There seems to be four versions of the Speccy EPROM running around here in North America. They Are:- The real **Speccy**, The **Russell** which supports TRACE, a means of following a BASIC program execution sequence, the **LarKen Spectrum V2** which supports line renumbering, and the **Dohany** which is the only one that has corrections for Speccy bugs. If you can't read the label to discover which one you have, do this test in the following order: Type in a three line program using the line numbers 1, 2 and 3. Now type PRINT # 10 If the program is now renumbered 10,20,30 you have the LarKen Spectrum V2. If not, then type PRINT 1/2 -.5 and if the answer is 0 then you have the Dohany EPROM. If the answer is 2.3283064E-10, you have the **Speccy** EPROM]--==(GATOR)==--*

Rod Gowen writes: ... surprised to see in NTN what could have been taken as a complaint regarding the fact that someone's name didn't appear on the list of RMG customers that I mailed out to a lot of N/L publishers ... If the person's name didn't appear on that list ... it simply meant that person had not purchased anything or had no correspondence with me since 1991 ... I see no reason to keep a person on my "active user" list if they do not order anything or ask any questions of me.

[Only those since 1991? We at CATUG may have thought of your list as a TIMEX/Sinclair roll-call, but I think there is another explanation, Rod. Time is like a pyramid, the older we get, the faster time goes! Young people think two or three years is a long time ago but us older folks think two or three years was just yesterday. We who were surprised to not find our names on your list were saying, "Didn't we just order something from Rod recently?" The trouble with T/S users/ customers is we have had our machines for over 12 years now and we are forgetting to make a purchase now and then! Please forgive us and thanks for hanging in there for us all these years, Rod]--=(GATOR)==--

NOTICE

It seems that it is hard for us folks to recall the last time we paid for membership. Our Chairman wrote me, " am I paid up? According to the list in ZQA! and my check book, I am not So here is $10 00 for me. Put a prompt on the last issue envelope Don Lambert." *Guess he is right, more work for me!* Abed

Starting with this issue, your membership expiration date will be after your name on the Mail Label Example -

YOUR NAME APR94 (Expires April, 1994)
12345 STREET
YOUR TOWN STATE ZIP CODE

Trea$ury Note$

Supporting T/SNUG

		Expiration Date
Paul	Anderson	5/94
Ronald	Baty	6/94
Dave	Bennett	8/94
Don	Berry	11/93
Alvin	Bluman	6/94
Daniel	Chatlin	8/94
Les	Cottrell	6/94
Jaime	Cruz-Figueroa	4/95
Robert ☺	Curnutt CATS	8/94
Frank	Davis ISTUG	9/93
Daniel	Elliott Computer Classics	5/94
Ruth	Fegley CATS	5/94
Ferdinand	Gunther	5/94
Robert	Hartung	4/94
Fred	Henn	7/94
Fredrick	Hill	2/95
William ☺	Homer	12/94
Glenn	Hufstedler	7/94
Rod	Humphreys VSUG	Charter
Warren	Jackson	1/96
Edward	Jordan	6/94
Jon	Kaczor GCTSUG	8/94
Joan	Kealy	4/95
Quentin ☺	Kent	12/94
Wayne	Knaust	1/95
Jeffrey	Kuhlmann	7/94
Donald	Lambert T/SNUG ZQA!	4/95
David	Lassov	12/94
David	Leech Byte-Back	9/93
Robert	Madans	5/94
Lt. Col. Walter	Malin	3/94
Lafe ☺	McCorkle	9/94
Harry	Miller Jr	5/94
Frank	Mills CATUG	2/95
Gregory	Newkirk	5/94
Richard ☺	Norek SUGWNY	1/95
Gilliam	Parnah	12/94
Jack ☺	Payne	10/94
Hugh	Polley	5/94
Hugh	Scriven	11/94
Robert	Shade	2/96
John	Shepard	1/95
Greg ☺	Simmons	11/94
Louis	Simon	6/94
Francine	Sklar	12/94
Edward	Snow	5/94
Dane	Stegman	1/95
Mike	Stephens	7/94
Alexander	Swetzer	7/94
Ivan	Zachev	12/94
Wesley	Zapotochna	6/94

☺ *Welcome, New Members*

As of April 8, 1994 we have a balance of $396 34

Abed Rahale Treasurer
The Timex/Sinclair
North American User
Groups

It's Re-Up Time

for those who did not

FROM CHAIRMAN'S DISK

Donald S. Lambert

January 9th

In trying to get Spectral Writer converted from the Oliger interface to LarKen I ran into a problem Or should I say several problems First one is that the EPROM for SPECTRUM on the LarKen disk board will not work with the Oliger disk interface or else there is something that I don't know The system will not come up So I had to use the computer with the internal RUSSELL version of SPECTRUM. Then I did find out that while I changed the LOAD/SAVE lines to LarKen that in practice they did not work. The program would SAVE using SPECTRAL WRITER's SAVE program option but after that it would not work. If you left the menu for any reason you could not return. Then I found (rather Bob Swoger found) that some lines were changed in the process of the SAVE So that is another problem And if you used the NMI/push button SAVE it did not help either although it was better than the SAVE by way of the SAVE option in the menu.

And with the program LISTed to the screen with the Russell SPECTRUM it seems to list it with no (or fewer ?) errors but with the EPROM on the LarKen board it gives lots of errors Is there enough difference that they are not compatible?

I realized that there are a number of T/Sers out there who still work with the cassette mass storage system and for various reasons can't or will not change to disk systems. With the TS-1000 there are no new ones still available on the market so the only way to go that route is to find a used unit. With the TS-2068 there are a number of different units that might be found used but there is one that is still available from J Oliger Co But that does not help those that are not interested or can't afford a disk system. However, working with the cassette is frustrating since programs are put on the tape serially and you have to go through all the others to get to the one on the end. I had developed a way to avoid that with my TS-2068 and TS-1000 before I got involved with a disk interface with either machine

The article I worked on back in 1989 was written when I was first trying to get started with a disk interface and I did not have my favorite word processor converted to disk. What I was using was the LarKen floppy disk interface on the TS-2068, the way I got around the built in cassette LOAD/SAVE was to use the NMI button and force a SAVE of everything in memory While it worked, it did use up 10 tracks of disk space To get the files out to edit them and to also be able to send the files on disk to Abed Kahale, I had to get them SAVEd as a file So I broke the program (MSCRIPT) and LISTed the program to find where the file LOAD/SAVE was in the program, then accessed the program and changed those lines to the LarKen floppy disk commands so that I could SAVE them to disk as files However, sometimes when the files were LOADed as NMI, I got scrambled screens in which the characters were changed

Here is a sample of what it looked like

MCITC madMn		eoyug	41
pedaocmn	dcae	eoyfe	18
hnefn tig	srnj	idwwda	6
idtx tig	tig	Cmad?_	

However, when it does that, if you press CAPS SHIFT and SYMBOL SHIFT plus the H key gets you to the menu and into the correct lettering for MSCRIPT Occasionally it will get hung up and it is locked out of control, in that case try a reload of the NMI program

The LarKen system, even using the NMI button to SAVE the word processor and the text file was so much better than the cassette system that I used it that way till I learned to add the LOAD/SAVE routine to the cassette version (V5 0) of MSCRIPT that I was using. Later I added the V5 5 and really got going. I also have the V5 3, which I have not used since I use the V5 5 all the time

The more I used different programs from the Disk Utility System by Kristian Boisvert the more I learn just how valuable the disk is for LKDOS users I will have to recount some things that can be done with that disk.

But the big problem has been the weather I guess I am getting cabin fever and some days (when the temperatures are in the 0 range) it is too cold for

me in the computer room. I guess I am not a lover of cold weather But what choice do we have, it is either being cold or facing the fires, the floods or the shake rattle and roll of our western state No place is perfect *in* all ways

Here it is February 27th and we have been through several winter storms and I was prevented from attending the February 26th meeting of ISTUG in Indianapolis not by the snow on the highway but by the snow in the driveway By the time I got the driveway cleared it was too late to go even if I had planned to go Masako and I had decided that the weather was not the sort to make a 150 mile one way trip

I have ordered a used AERCO 2068 floppy disk interface from Mechanical Affinity and I will be messing with that later on. I have a pair of drives that were set up for the AERCO ZX81 floppy interface and I will see if they will work with the 2068 According to an AERCO manual that I have they should. However, different versions have different options. Wait and see what I get. I bought a version that had 64K on the interface board. But it can be upgraded to 256K if needed to be. More about that in the future

Last week I received the AERCO floppy disk interface for the TS-2068 and it was the 64K RAM version. If and when I decide, I can have it modified to 256K since the manual details how to do it. It does work since I managed to FORMAT a disk and then COPY the BOOT disk to the newly FORMATted disk. I also received the BOOT disk for RP/M which is a version of CP/M. Reminds me of having the SPDOS for converting the Oliger disk system to the Millenia K system And since the DOS of the AERCO is different I will have to relearn a lot of commands. I will be able to give more information after I have a chance to play with it more and that will be after I send all this material to Abed Kahale to make up another issue of ZXir QLive Alive! *[You did a fine job Don .... Ed.]*

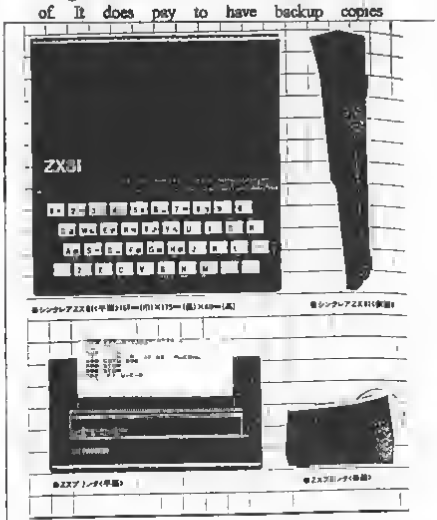
Found an ad listing ZX-81 prices amongst other things in the 1980's (I think 1982) and the prices were enough to take your breath away The ad might be run if there is room

1982 Japan

D G (Smitty) Smith writes "The ZX printer can't use thermal paper, it must have the aluminum coated paper Radio Shack Quick Printer paper will work." *(Don- Seems I read that thermal paper will ignite in the ZX printer but I am not sure if it will.)*

There is a new concept on batteries that RAYOVAC has marketed. Basically they are rechargeable alkaline batteries Should be a cheaper way to go with the laptops since the alkaline Renewals have greater capacity than NiCad. I have a data sheet on them but it does not list the data as I wanted to see it displayed. I will include some material on them if I get it figured out. Mr Richard Jelen is working with them, see his letters

I did remove a heart stopper from my working TS-2068 computer And that is the little blue shide switch on my Russell ROMSWITCH. That little magnet will definitely erase a disk if it is laid on it, I pulled off the magnet and put it where (I hope that I can find it again) but not near any disks The disk that got crashed was one that I had a back up copy of It does pay to have backup copies



OLIGER UTILITIES - Software

by Donald S. Lambert

I thought that I would give a sort of review and step through manual for DISK FILE MANAGER which is an Oliger utility So far as I know there is not a manual for this software that is in public domain. The program is all in BASIC and occupies 10,022 bytes so for those that want to improve or change it and are programmers it is easy to do.

DISK FILE MANAGER LOADs with a report of "0 OK, 601:1" and either RUN or GOTO 1 will initialize it. First screen prompt, "Source Drive?"

Enter that and get prompt, "Destination Drive?"

Enter that and get prompt, "Is Above Correct?"

Enter "Y" for yes and get the menu. NOTE: if you have the T/S 2040 printer plugged in and turned on when you do "LOAD DRIVE ? CAT" (? stands for the drive you selected for the Source drive) the printer will PRINT out the CAT of the source drive. This is what the menu looks like

Disk File Manager

LOAD DRIVE 0 CAT
INDEX AND SAVE
MOVE FILES
LPRINT DRIVE 0 CAT
FORMAT ANY DRIVE
RENAME FILES
RESTART ME
QUIT ME

To select the options use the space bar to move the cursor downward only. If you over shoot then it will jump to the top when it reaches the bottom. To select a cursor marked selection hit the ENTER key.

MOVE FILES is a copy option. It will copy the disk in Source Drive to the destination drive. The drives do not have to be the same (40 track to 80 track or the reverse but of course the copy terminates with disk full prompt). To copy LOAD source drive's CAT, in other words hit ENTER with the cursor on LOAD DRIVE ? CAT and it will LOAD the CAT and step through the files and then ask SORT? (sort into alphabetical order) N will get you back to the MENU or Y will sort the files and then it will get back to the MENU. Move the cursor down to the MOVE FILES option and hit ENTER. You will get a prompt "Have You LOADed the CAT?" If N for no will return you to the MENU. If Yes hit Y and ENTER and then the CAT will be displayed on the screen with the cursor on the first entry. If you want to MOVE that file hit the ENTER key if you want to skip moving it hit the SPACE BAR. If you want to MOVE (copy) all files just hold down the ENTER key and it will step through and will also start the copy procedure. When all entries are marked or skipped then the prompt: "Place New Disk in Drive ?" and a flashing prompt: "Hit ENTER TO MOVE Files "?". When that is done the drives get busy MOVEing the files from source drive to destination drive. Finishes with prompt: "Hit ENTER for MENU"

In addition to MENU you get a report of how many cyls FREE in each drive.

INDEX AND SAVE. CAT must be LOADed. It SAVEs as disk name and type as "disk name C ARR" but I don't know what to do with it. I could not LOAD it again. (Anybody know?"

LPRINT DRIVE? CAT. if CAT not LOADed gives ERROR. "2 variable not found, 580:1" This outputs to a large printer, I needed to add a line advance since it all printed on one line.

FORMAT ANY DRIVE. CAT does not need to be LOADed. First prompt "Which DRIVE? (0-3" When drive entered get second prompt "TRACKS/INCH 40/80" 1 entered 42. Third prompt: "Is the above correct?" If N is entered goes back to ask "which drive?" If Y get fourth prompt: "Name for Disk?" You are allowed 16 characters (I know that you LarKen users are crowing since with the LarKen you can almost write a book but on the other hand the Oliger allows any ten

characters for a file name instead of six a period and mandatory type plus one more character) and after name is entered and you hit ENTER the FORMATting starts with the following prompts: below prompt for name is displayed the disk name you entered and at bottom is displayed "FORMATting" and again gives disk name. I modified my working copy of DFM ABC so that it stops when FORMATting is complete. Otherwise it flashes very fast the directory of the disk and back to the DFM ABC menu. In line 960 there was a PAUSE that I changed to STOP that I wanted for personal reasons. To return to menu on my version I hit CONT and ENTER.

RENAME FILES: CAT must be LOADed. Selected file(s) will be prompted "RENAME File Name to?" and then after that is entered get prompt: "Correct?" If correct the disk drive will operate and other file names will be presented till all are processed. When all files are done prompt "Hit ENTER for MENU" appears.

RESTART. Goes back to start of DFM ABC in other words to enter source drive and destination drive.

QUIT ME: gets "9 STOP statement, 150:2.

I had DFM ABC for quite a while before I started to use it and now I use it to FORMAT all my Oliger disks. The main reason for that is the Oliger EPROM that I have is version 2.64 and the default is to 80 tracks. This way I don't have to remember to change the track from 80 to 40 (LET /T=42) each time I use it. 0/0

Making Modifications to DBEASY

by Al Feng

DBEASY by *Bill Cable / Wood And Wind* is a program which I appreciate more and more each time I use it. As Bill notes in his documentation, it is open to the user and readily available for modification.

The only difficulty with this statement is that I would hazard to guess that the average DBEASY user does not know how to make any modifications in an ARCHIVE based program.

The following is the simplest of changes, but after seeing how easy it is to implement, you may be encouraged to make some of the other changes that may have come to mind.

An aspect of DBEASY that I wanted to change was the presentation of the date on the MAIN MENU screen from year/month/day to the standard American format of month/day/year.

```
Proc heading
paper spap: ink sink: cls: paper hpap:
 ink hink: print rept(" ",240)
let i$=time()
let i=val(i$(1 to 2))
let j=60*i+val(i$(4 to 5))-smin
        rem the following is the old line
print at 2,1;upper(sys$);" MAIN MENU";
 at 1,42;today$;tab 54;"day " ;day;
 " of 19";val(today$); at 2,42;time();
 tab 54;j;" minutes since start"·
 print ; teb 80
paper spap: ink sink: if begcnt=-1: let
 I$="-": else: let i$=str(begcnt, 2,0).
 endif :
 print at 5,1;upper(sf$);
print at 5,48;"Module    :   " ;mod$·
 print at 6,48;"Programs on  :  ";pd$:
 print at 7,48;"Database     :  ";sd$;
 sf$;".dbf";
 at 8,48;"Records      " ;I$. print
endproc
```

```
proc heading
paper 7: cls: paper hpap: ink 0: print
 rept(" ",240)
let i$=time()
let i=val(i$(1 to 2))
let j=60*i+val(i$(4 to 5))-smin
     rem the following is the changed line(s)
          [American date format]
print at 0,42;today$(4 to 6),"/",
 today$(1 to 2); tab 54; "day  " ;day;
 " of 19";val(today$): ink 7: print at
 1,1;upper(sys$);" MAIN MENU"; at 1,42;
 time();tab 54;j," minutes since start"
paper 7: ink sink: if begcnt=-1: let
 I$="-": else : let i$=str(begcnt,2,
 0): endif : print at 4,1; upper(sf$);
print at 3,48;"Module       :  " ;mod$:
 print at 4,48;"Memory :  " ;memory():
 print at 5,48;"Program on  :  " ;pd$·
 print at 6,48;"Database    :  " ;sd$;
 sf$;"_dbf";at 7,48;"Records  : " ;i$;
print at 8,48; "Screen    :  " ;scn$;
endproc
```

Use the following if you prefer day/month/year.

```
print at 0,42;today$(7 to 8);"/";
 today$(4 to 5);"/";today$(1 to 2);
                  or
print at 0,42;today$(7 to 8);"/";
 today$(4 to 6);today$(1 to 2); ...
```

Perhaps the easiest way to implement this is to.

a) EXEC_W flp1_ARCHIVE
b) type "edit" ENTER
c) proc heading ENTER (type in the second example)
d) SAVE "flp1_this"
e) RUN "DBEASY"
f) Exit program by pressing (esc) when prompted whether or not you wish to quit BEASY
g) type "merge flp2_this" ENTER
h) type "start" ENTER
i) verify appearance
j) exit program
k) SAVE object . "flp2_DBEmm"

OF course, yon can edit directly within your current version of DBEASY, if you like.

This reminds me of a LOADing tip Presuming that you are using the standard version of ARCHIVE (vs From within XCHANGE), you can save a few key strokes and hand movement if you

RENAME flp1_DBEASY_prg to flp1_R_prg

Then after you EXEC_W flp1_ARCHIVE, you simply have to INPUT

RUN ENTER R ENTER

Your left hand should (will) already be poised to press 'R', so, some effort should be saved. Of course, you may opt to select a different single_key other than 'R' if you choose

NEWS YOU CAN USE

by **Al Feng**

For those out of the mainstream, like myself, you may like to know that

Miracle Systems Ltd.
25 Broughton Way
Osbaldwick, York YO1 3BG UK

has recently announced/demonstrated their Super Gold Card [£325 + vat {UK residents}]

The SUPPER GOLD CARD uses a 25 MHz. 68020 (vs 68000) with 4 Mbytes of memory.

There is a trade-in policy which is very generous, and I would definitely put this at the top of my things to do/get list if I had not just gotten a replacement, INGOT5 chip which corrected the speckled screen syndrome which plagued many of the older GOLD CARDs.

If you have an original GOLD CARD which is still experiencing any unstable video output, then you should write to Miracle and request a replacement chip. The replacement chip is free, just describe your ROM's version number the CARD {color} and the problems you are experiencing.

If you cannot afford a new SUPPER GOLD CARD, Miracle is "recycling" the soon to be returned GOLD CARDs for only £150 (about $225) This is a very good deal.

HAPPY TRAILS,
AND COMPUTING, TO YOU

VU - 3D 10 YEARS LATER

by Abed Kahale

I bought my TS-2068 and VU-3D among other programs in 1983. Proud of my new computer, I took it to the office to show-and-tell my coworkers.

A couple of weeks later, the boss called and advised that I am to give a *command performance* with the VU-3D to no less than our General Precision and Link Simulator divisions who were involved in the space program at that time. What happened is, somehow, our Corporate big wigs learned of my VU-3D and got the notion that they now can have a CAD (Computer Assisted Drafting) on every desk.

I did feel like an imbecile demonstrating to the *top brass* what the program could NOT do and why it was NOT meant for engineering use, instead of how great it was. After the demo, one of them said, "Don't feel bad, we never believed for a moment that a $14.95 program was going to revolutionize engineering. Thank you for letting us have a peek at what the future will bring for the masses."

LogiCall Review

Auxiliary Operating System AOS-LKDOS *by Rod Rabalo*

Developer Bob Swoger

LogiCall contains all the commands required to run LK-DOS (TS-2068 & Spectrum) It prompts for a command and executes these commands with a minimum of typing.

Moves from drive to drive with 2 keystrokes, moves into and out of a word processor, database, spreadsheet, terminal program and other programs using a few keystrokes Displays word processor files and pictures on the screen without running any program. FORMAT, MOVE, ERASE, CAT, POINT, and VERIFY keys all work without the use of the "RAND USR 100: or PRINT#4: " that have to be typed using LKDOS alone It really proves itself with multi-drive system and will be of great benefit even with a single drive. And, it is not memory hungry, it only occupies one disk track. It does complete the LarKen Disk Operating System.

LogiCall comes in two versions, 5.0 for all including ROMSWITCH and 5.2 for Spectrum ROM in the doc port. OUT 244,3 is not required.

A complete file management system, more accurately a HUMAN INTERFACE (you and the machine) shows the years of refinements.

Holding down the ENTER key (or the ENTER and the 'J' keys for the RAMDISK) at power up, displays the CATalog and the `Drive?` prompt. ENTER the disk drive number or 'T' for tape or just ENTER to display the `Program?` prompt.

ENTERing 'H' or '?' at either prompt, displays two screens HELP menu.

ENTERing one of the following at "`Program?`"

'9' displays CATalog.
'V'erbose displays the complete CATalog.
'B'rief displays a CATalog that only shows programs that can be LOADed and RUN.
'N' at the `scroll?` displays the `Program?` on CATalogs that scroll off the screen
'W' LOADs word processor
'T'erminal LOADs terminal program.
'5' or '8' RENAME "*old*", "*new*". ENTER the *NMI-S2.CM* to be renamed, then the new *name.B1*.
'7' or 'E'RASE – ERASE "_.". ENTER the filename and extension
'A'dds AUTOSTART to a disk.
'S'ave SAVEs "L.B1"
'Z' COPYs to the TS-2040 printer
'C'OPYs to a large printer.
'N'ew activates AUTOSTART again
'0' or 'F'ormat LOADs FORMAT B_
'6' or 'M'ove LOADs MOVE BL
'R' VERIFYs the disk for CRC errors.
'K' SAVEs SCREEN$ to dask.
'Q'uits or 'E'xists to BASIC where the program can be customized.
'0, 1, 2, 3 or 4' moves between drives.

At the `Program?` prompt, hitting ENTER without typing a filename activates the SCAN LOAD mode. The space bar or any key in the lower key rows advances a BRIGHT BAR down the screen, the top row of keys will send the BRIGHT BAR back toward the top ENTER LOADs the BRIGHTened program. The arrow keys do work as normal or without shift.

ENTERing a name with an extension of '.C$' at the `Program?`, LogiCall displays it as a SCREEN$ While ENTERing a name with an extension of '.Cm' or '.CT', it displays MSCRIPT, TASWORD II or SPECTRATERM word processor files directly from disk.

LogiCall disk ensemble includes VUFILE, VUCALC, TASWORD II, disk/tape records base and MTERM II among others

It is like an upgrade from a gear-shift to an automatic transmission with overdrive.

LogiCall is available from RMG Enterprises and from Mechanical Affinity

TS-2068 — CMOS ON BOARD

by Richard A. Jelen

Letter dated 11-12-93

Earlier this year I finished repairing the three 2068 mother boards, I bought last year, with the help of the gentleman from "COMPUTER CLASSICS" in Cabool, Mo. Seems all the SCLD's had been zapped on the A7R (REFRESH), along with much memory and multiplex damage. He showed me how to rebuild the SCLD REFRESH circuitry without replacing the SCLD. Naturally, it worked great and I was so impressed with him I bought a 286 PC he had advertised, which also works great I might add. My wife and children use the 286 for greeting cards, etc. They're tickled pink and even though I don't use it much myself I feel it was well worth the investment.

This spring/winter I changed one of the repaired 2068 mother boards over to all CMOS, except for one EPROM, and managed to reduce power consumption to 150 ma.! The original 2068 draws about 250 ma. which is even less than the TS-1000 @ 270 ma. that I made into the Ni-Cad portable, which gave me almost 6 hours running time on 1.6 AH 'C' size Ni-Cads. With the 150 ma. rating on the 'CMOS' 2068 I'll be able to get 6 5 hours run time using .85 AH "AA" size Ni-Cads which is great and cuts size and weight.

CMOS — 2068

DESIGN	JAMECO #
U3 = Z84C00-4	35781 @ $3.75 ea.
U21 = 74C00	45161 @ $0.29 ea.
U15 = 74AC245	45671 @ $0.69 ea.
U9 = 74AC245	45671 @ $0.69 ea.
U5 = 74HC244	45655 @ $0.69 ea.
U10 = 74HC257	45719 @ $0.55 ea.
U11 = 74HC257	45719 @ $0.55 ea.

(Sub. for 74LS/HC157 as tri-state not used or needed)

U16 & U20 ROM's — I managed to get the XROM from "COMPUTER CLASSICS" in Cabool, MO but though he tried he couldn't get a CMOS home ROM to work. The XROM cuts power consumption an additional 12ma. (Every little bit helps). Original 2068 = approx. 250ma., CMOS 2068 (as above) = 150ma., - bear in mind that probably nothing can be done with the U4 (LM1889) and U14 (AY-3-8912) unless you just remove them?

The only other CMOS to be tried will be the home ROM if I can get one and the 4416 dynamic RAM's substituted to 62256LP12 CMOS static (maybe).

CMOS ↔ Complementary Metal Oxide Semiconductor

Ni-Cad Charger

R. A. JELEN
11443 ISLAND RD
GRAFTON OH 44044

Letter dated 11-28-1993.

Nice to hear from you so soon and thank you for the disk info and program, though it will be many months until I get it all together to assemble all the interface parts, I do appreciate your help Yes I would like the disk drive P S. Printout. I will probably start out with 2 ea. IBM style (8088) drives @ 5 25" and 360K DSDD.

As for your request to publish my LOADER schematic, certainly, as long as I receive due credit, maybe a mention that they may write to me (with large SASE) for more info: such as PC artwork negative and assembly & test instructions. This also goes for any other info: schematics, etc. I may send you in the future.

I've enclosed a marked up constant current charger for the TS-1000 system I made (Mine also included a charger for the Monitor battery pack which had to be separate since the voltages were quite different). Also, the monitor draws loads of current so I had to double the Ni-Cad pack for it to get enough time.

Circuit drawings.

For this design (a non-constant current) the D. C. Power pack must be at least twice the voltages of the series Ni-Cads (in this case 2 ea. 1.2V Ni-Cads = 2.4 X 2 ⇒ 5V it must also be capable of twice the charge rate for the Ni-Cads (in this case the charge rate is 100ma., so the 5V D. C. charger must be capable of 200ma. or higher. This is in case the Ni-Cads happen to be shorted in which case all power is dropped across R1 and the power pack will remain unharmed. R1 value is figured by first determining the desired charge rate for B1 *(please note most Ni-Cads especially the older ones have upper limits to their max. charge rate and the user should determine this before attempting to charge any Ni-Cad)*. In this case, we've chosen 1.2 AH Ni-Cads and its safe to charge them @ 100ma. (I don't know of any standard rule of thumb for all Ni-Cads AH'a rating vs. safe max. charging rating). This D. C. power pack is 5V D. C. @ 200ma., however, since we are charging @ only 100ma. the 5V D. C. output will be probably be around 6V D. C. since its RMS. Full output will be near 7V. Our cells are about 2.4V subtracted from 6V = 3.6V that R1 has to drop @ 100ma., so R1 should be 36 ohm @ .5 watts minimum (1 watt would prevent burnout of R1 if the Ni-Cads short).

If we choose a std. 10ma. LED for LED1 we will run it at 5ma. (because if Ni-Cads short it will then become 10ma. and won't burn out). So we have 3V drop across R1 minus the LED drop (which can vary between 1.5 and 2.2V depending on the LED type) so we'll choose the lower value (unless you test the LED you are going to use) to further protect the LED (Only slight brightness will be sacrificed) of 1.5V which equals 2.1V to be dropped by R2 @ 5ma., so R2 equals 420 ohm (390 ohm would be OK).

LED1 will only light if the power pack is plugged in and Ni-Cads are connected (to load R1). However, if Ni-Cads are shorted there is no way of knowing unless you add a circuit to monitor the Ni-Cad voltage, etc.

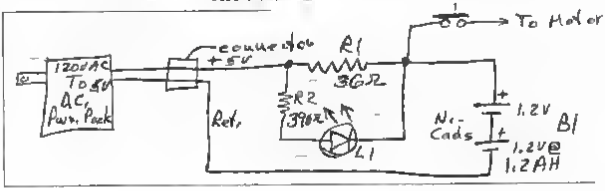
Like I said, this is the cheapest way to go but the batteries charge is slightly linear, which is for most Ni-Cads, trickle charging is "OK".

Letter dated 12-20-1993.

Nice to hear from you again. Thought you might be interested in the latest developments in alkaline batteries. Not long ago I saw a commercial on TV RE. a battery charger for standard alkaline batteries which allowed 25 ea. full recharges. Now, I just happened to see this ad in my wife's ENTERTAINMENT WEEKLY magazine. To me, it looks the way to go. They are now available in stores and I've priced the chargers @ $17.00 - $29.00 (29 is for a charger that will handle either 4 'AAA's, 4 'AA's or 4 'D's and the batteries are about what you'd pay for a Ni-Cad equivalent.

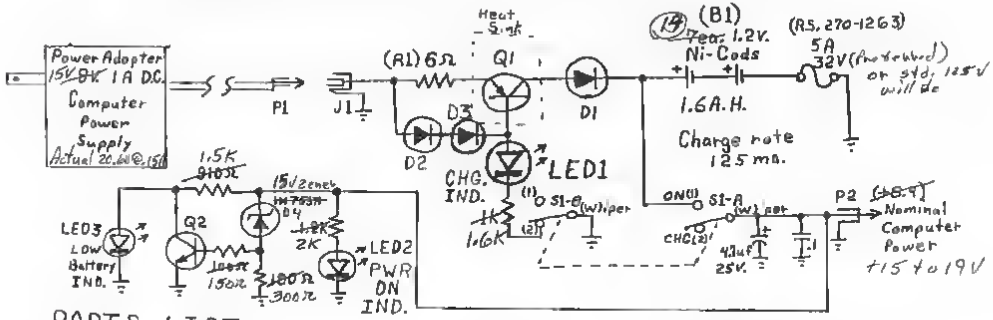
At lower current draw I suspect results as quoted in this ad, but at higher currents such as toy motors, portable fluorescent lights and your dusk drives I believe Ni-Cads may prove better — but it needs to be put to the test. The biggest plus is that once recharged they will hold full charge for 5 years just like a new alkaline. This I think is great.

Here's a very simplified Ni-Cad charger as used in many small Ni-Cad power tools such as screw drivers.



T/S ~~1000/1500~~ Ni-Cad Power Supply and charging system

CAUTION: Charge time 13 to 14 hrs, Do Not Overcharge



PARTS LIST:

Q1 - 2N4919 (or equivalent) PNP, 40V, 3A., 30W
Q2 - 2N718 (or equiv.) 2N2222 etc. NPN Gen. Pur.
D1 - IN4003 (or equiv.) 1Amp. @ 200V (R.S 276-1105)
D2 & D3 - IN4001 (or equiv) 1Amp @ 50V (R.S 276-1101)
D4 - IN755A (or equiv) 7.5V. zener ½ watt (x2 in series)
LED1 - LED2 - - Jumbo Red, T1¾ (R.S 276-041)
LED3 - RED, T1¾, Blinking led (R.S. 276-036)
S1 - D.P.D.T. (Toggle or slide R.S. 275-403 or 691)
R1 - 6Ω ½ w (Parallel 1ea. 10Ω & 1ea. 15Ω)
B1 - ~~14~~ 7 each (1.6 A.H., 1.2V, Ni-Cads (R.S. 23-190)
J1 - P2 - (½ ea.) Standard Plug & Jack (R.S 42-2472)
All resistors ½ w, all capacitors in uf
Sources: R.S. (Radio Shack), ECG (Local Elect. supplier)

~~#NCSO~~ (2008 standard)
T/S ~~1000~~ 1.6 A.H.
Ni-Cad. Power Supply
features ~~8~~ HOURS run time with 30 minute reserve on Low Battery (LED 3), with Computer only. ~~3 to 3.5 Hrs. TS1500~~
(w/all CMOS = 10+ hours (w/1hus + stdby)

5-13-92 R.A. JELEN

Please note changes in Constant current charging circuit and also Note R1 @ 4Ω = 190ma, 5Ω = 150ma and 7Ω = 110ma and 8Ω = 90ma

TIMACHINE And The FDD System

by the late James Brezina

TIMACHINE may not work properly with the Zebra FDD system. Depending on which version of the FDD you have, either the keyboard will lock up as soon as TIMACHINE runs or everything will work correctly until you use FDD I/O commands. It should be noted that if you choose to modify TIMACHINE for the FDD as listed in this article, you will loose some friendliness and ease of use.

To determine which problem you have, do the followings- Load TIMACHINE from tape, answer 'N' to the backup copy prompt, the ENTER CAT *. If you are able to do this, then you have the FDD I/O problem. If you can't ENTER CAT *, you have the locked keyboard problem. To correct these problems, you should first transfer TIMACHINE to FDD - MERGE the BASIC loader; change line 9997 to SAVE * .. (all SAVEs!); SAVE TIMACHINE LINE 9997; then enter GOTO 9997. Answer 'Y' to the Backup Copy prompt. Now restart the system and MERGE TIMACHINE, then complete the correction with one of the following two procedures:

A. For a Locked Keyboard:

1. Line 40: change 26688 to 26694
2. Change all SAVEs in line 8070 to SAVE * (DELAY CODE can be deleted)
3. Change all LOADS in line 9997 to LOAD
4. To use TIMACHINE. LOAD it from FDD and enter or load a BASIC program. Then invoke the TIMACHINE options as follows

*C is invoked by typing RANDOMIZE USR 37476

*T will not work

*X is invoked by typing RANDOMIZE USER 37476 ERASE is invoked by typing RANDOMIZE USR 37536

*D is invoked by typing RANDOMIZE USR 37460

*E is invoked by typing RANDOMIZE USR 37468 NEW will no longer be trapped.

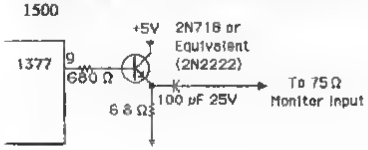
B. For the FDD I/O Problem:

1. Line 9997 remove the last command, GOTO 8000
2. Add lines 9998 and 9999 as follows:-
3. RESTORE 9999: FOR x=23780 TO 23792: READ y: POKE x, y: NEXT x: POKE 37402, 228: POKE 37403, 92: GOTO 8000
4. DATA 254, 122, 194, 224, 146, 237, 70, 241, 62, 230, 195, 48, 146
5. Enter: SAVE *"TSTIME" LINE 9997
6. Note: Use the name by which your version calls the first part of TIMACHINE
7. To use: *Z prior to any FDD I/O operation. RANDOMIZE USR 26688 after all FDD I/O operations. All other commands as per manual.

QL Video Output Circuit

by Richard Jelen

As I've gone to only using monitors (or TV's that have AUX. inputs) for my Timex computers I bought an 8-pin DIN and following the service manual schematic I hooked it up and found that it is reverse, but no problem, as the mono composite video is the only one hooked up and doesn't have the proper signal strength anyway and the PAL output is not hooked up and in it's place is +5V. I opted to build my own version Composite video output coming right off pin 9 of the MC1377P color chip. I use a GP transistor of fairly high freq. resp. and capacitor coupled to standard phono plug output. This works great and gives a nice high signal with no distortion which works equally well with all my monitors and TV's AUX. inputs. This is exactly the same circuit I've designed for the 1000 and 1500



QL WOES

by Nazir A. Pashtoon

In Bill Lawson article (Nov/Dec 92 Toronto's SINC LINK) mentioned a myriad of symptoms of his malfunctioning QL system. I hope he has resolved and sorted out these problems. The symptoms he mentioned;

Cursor disappears and machine locks up
READ/WRITE FAILED
Double listing of Directories
Use DELETE, get PROGRAM DOES NOT EXSITS
Windows changing constantly
Code? scrolls by
MINERVA ROM is on board

and a few more, apply to approximately a dozen QLs in my user group (CATUG) and my own. These problems invariably surface when a daughter-board with Minerva or QDOS EPROM is installed in the QL. To solve these problems, proceed as follows.

a) All the important integrated circuits in the QL are socketed. Socketed computers from LISA to the first shipments of ATARI ST and other computers were plagued by unreliable operation. The same is true of the QL. Many times the microdrive problem and unreliable video blanking is directly traceable to the ZX8302 and ZX8301 chips. Note that these two ICs are CMOS, and static-sensitive, touch a grounded metal object with your fingers before you touch the ICs. When you open your QL, it is advisable to spray the pins and sockets of these ICs, as well as the pin rows and sockets of other ICs with a "tuner cleaner", such as Radio Shack #64-3320, or equivalent. After spraying, use a flat-bit screw driver, or a butter knife to displace the chip slightly upwards from both ends. Spray again, and press the integrated circuits back in place. This cleaning should suffice for at least a year.

b) As mentioned earlier, many users who had fully functional machines, started having problems when they installed a small EPROM daughter-board inside the QL. After carefully studying the problem in about a dozen cases, I concluded that the problem is caused by hairline cracks in the copper traces of the daughter board. How are these hairline cracks caused?

After watching our members, and my own practice of how I would install the daughter-board on the QL motherboard, it became obvious that we ourselves were the culprits. To explain, normally we would first install the daughter-board by pressing on the corners of the board, and then press-in the EPROM. Both the procedure as well as the order in which the task is performed are wrong. Why?

The daughter-boards we were using, are flimsily constructed from very thin copper traces (to keep costs down, this is true of all peripheral boards, and the QL motherboard). As the figure shows, two sockets are installed side-by-side, with approximately 0.2" spacing, one socket that is used for the EPROM is an ordinary dual-leaf socket, and the other one is a machined socket. The pins of the machined socket protrude, and is fitted in the ROM socket on the QL mother-board. In order to install two sockets side-by-side one has to saw-off the socket stabilizing bridges (two or three). The consequence of this is that when you want to install an EPROM in the normal socket, it flexes the socket rows sideways so much that some times it is not possible to install the EPROM. This flexing causes the hairline cracks in the copper traces on the back of the daughter-board. Belatedly, one discovers that in order to install the EPROM, one has to hold the two rows of the socket pins of the normal socket vertically by one hand, and then fit the EPROM in the socket. We discover this after we have already caused damage to probably more than one trace.

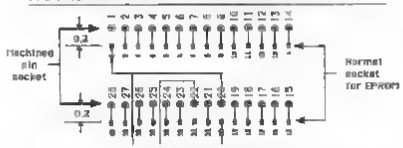
The second mechanism causing the cracks, is the way we normally install the flimsily made daughter-board, by pushing on the corners of the board. This method of installation causes too much pressure on the corner pins of the machined socket, and possible hairline cracks. As such, the suggested procedure for installation is to :

➢ First install the EPROM on the daughter-board, while holding the normal socket in a vertical position with one hand, thus avoiding the flexing of the pins of the normal socket.

➢ Second, install the daughter-board on the motherboard by pressing on TOP of the EPROM, thus causing the pressure to be equally distributed on all the pins of the machined socket.

All these hassles could have been avoided if the boards were properly manufactured. For example, metalization both on top and bottom of the daughter-board would have helped. Most importantly, instead of using a low cost machined socket, the use of DIP socket carrier (say Dip-Key #ED6028, $3.26) would have totally solved the problem. In this case you will have the benefit of machined pins, with pins flush on top, thus allowing the normal socket to straddle the socket carrier pins on top, without having to saw off the stabilizing plastic bridges.

The hairline cracks that I mentioned are hard to see even under a magnifying glass. Static testing by continuity measurements (using a VOM) could also be misleading. One can dynamically test by say, using a logic probe. One may even be tempted to cure the problem by putting solder globs on the affected traces. I recommend against it. The only sure method of solving the problem is, to do point-by-point wiring between the pins of the two sockets. This is much easier than it sounds. As shown in the



Back view of the daughter-board. The decoder IC is a 74HCT00 on my board.

figure, the two sockets are separated by a distance of 0.2", with all the respective pins connected by copper traces, except pins 1, 20, and 22. I use bare wrapping (28 gauge) wire. Make a tiny hook on one end of the wire, solder it to the pin, wrap the wire on the corresponding pin of the other socket for half a loop, solder and cut the wire with a razor blade or X-ACTO knife at the base of the pin. Do all the 25 pins shown in the diagram. This will, with high probability, solve your problem. In the worst case you may have to duplicate all the traces on the back of the daughter-board using wire-wrap wire. Do not use a soldering iron rated higher than 15 watts.

c) A third source of the cracks, is the protrusion of the daughter-board on top of the QL mother-board, and the pressure applied by the back of the keyboard. On the Samsung QLs, there is a screw on the back of the keyboard, which interferes with the top of the new EPROM that you install. One must remove this screw. Even the removal of this screw does not solve the problem, always. It is suggested that of the eight screws holding the keyboard and the base of the QL together, two screws, one in back and one in front, not to be installed. These are the screws which are left of center, roughly in alignment with the ROM sockets. It is worth mentioning, that depending on the height of the daughter-board, even the mother-board can be flexed by the pressure exerted through the daughter-board from the keyboard.

II. In the Mar/Apr 93 issue of Sink-Link, an article "Notes On QL Lock-Ups" by Hugh Howie, and I quote; *"I know of one person who has four QLs and is only now starting to have some success with one of them. Power Surges?"* Some QLs have exhibited this problem since its introduction into the market place. I have analyzed the problem, and I believe I have a low cost solution. I suggest that people facing this so called HEATING problem, send me $2.00 cash, for the cost of a device, jiffy-bag, and mailing by return mail.

PS After the above article was published, I received the Mark I version of Minerva 1.97. The daughter-board carrying a 1990 Copyright, is the best I have ever seen (in the QL market). It addresses all my objections. It has metalization on top and bottom with machine inserted metal eyelets connecting the top and bottom traces, with ground planes. Best yet, they have used only one machined socket for both the EPROM and the connection to the mother-board.

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The heating and cooling of the Printed Circuit Board (the turn ON and turn OFF of the computer) causes expansion and contraction of the copper foils (traces) that can cause intermittent loss of circuit continuity due to tarnish at the 'hairline cracks'. *Ed.*

Moving RAMTOP in ZX-81/TS -1000

Anthony J. Orosteen

This article will explain how to change the amount of memory you have available on the ZX-81 and TS-1000 computers. More importantly it will explain how to use 32K and 64K RAM packs efficiently.

The ZX-81 (I will only refer to the ZX-81 but it all applies the TS-1000 as well) computer can have up to 48k RAM added that is LOADable and saveable from Basic. Since the ZX-81 doesn't know how much memory is attached it checks to see how much memory is attached every time the power is turned on and the system self-boots. Unfortunately Sinclair never planned for more than 16K RAM of memory being added to the ZX-81 and initialization routine in the ROM does not check any memory above 32767 (the end of a 16K RAM pack). With a 64K pack attached you have memory locations up to 65535 but the ZX-81 will not know it and thinks that the memory is not there.

There are a number of RAM packs available (used and a few new) for the ZX-81. The most common sizes are 16K, 32K and 64K. Since the RAM area of the ZX-81 starts at 16384 and the highest memory location available is 65535 the most RAM that you can have is 65535- 16383 bytes or 49152 bytes on the ZX-81. As 1k of memory is 1024 bytes, 49152 is referred to as 48K. Some "64k" packs provide RAM UP TO the 64K location of 65535 and thus are called "64K" packs but actually have only 48K RAM while others provide 64K RAM from 0 to 65535 and allow you to switch in areas of RAM from 0 to 16383. Note that the ROM lies in the 0 to 8191 area and you will run into problems if you try to use that area. The area of 8192 to 16382 can have RAM but you can NOT put BASIC programs there so it's generally used for machine code routines and other accessory items. The Memotech 64K RAM pack is the unit I use and it will allow you to switch in areas below 16384 if you need that area. Some 32K packs will let you add an additional 16K pack to get a full 48K ram up to 65535 (the Memotech is one that will do this with no problems).

The ZX-81 has a number of system variables that keep track of where everything is in the computer. One system variable is called RAMTOP. It is located at 16388 and 16389. RAMTOP tells the computer how much memory is available. The computer takes the number stored in 16389, multiplies it by 256 and then adds it the number in 16388. This tells the computer the location of the first memory location that is not there. With a 16K pack attached you will get 128 if you enter PEEK 16389 and 0 for PEEK 16388. Thus 128 x 256 + 0 = 32768 for RAMTOP. By putting different numbers in 16388 and 16389 with the POKE command the computer will know how much memory you are using (well, not quite but more on this later).

There are three basic reasons that you would want to change RAMTOP.

1. To lower RAMTOP to provide room for machine code routines

2.that can not be overwritten by BASIC programs.

3 To lower RAMTOP to speed up save and load times.

4 To raise RAMTOP to make more memory space available to the computer.

It would appear that all you would have to do is to POKE in new numbers in 16388 and 16389 and RAMTOP is changed. Sadly this is not true. The computer will not fully recognize a RAMTOP change unless the command NEW is executed after the new value is placed in RAMTOP. The drawback is that NEW wipes out all of your Basic program and clears the variables area. The reason for this is that the machine stack and it's pointer (ERR_SP at 16386 &16387) are still in the old area of memory, blocking expansion of the program and variables area (see page 128 of the Sinclair manual for a diagram). NEW will move these items to just below the new RAMTOP value

and the memory is opened up (or reduced as the case may be) for programming.

Method 1 to move RAMTOP.

The general format for method 1 is.

```
POKE 16388, L      (low value portion)
POKE 16389, H      (high value portion)
NEW
```

To find values of H & L first determine where you want RAMTOP to be. Let's assume that you are using a 32K RAMPAK and you want to use every bit of memory. 32K ends at 49151, so divide 49151 by 256. This gives 191.99609. Round the number down to the nearest whole number and you have the value of H or 191. Now multiply 191 by 256 and you get 48896. Subtract 48896 from 49151 and you will get 225 or L. Now you can enter the following.

```
POKE 16388, 255
POKE 16389, 191          (32K values)
NEW
```

If all this math bothers you, just enter RAND 49151 in the immediate mode. The values of SEED at 16434 &16435 will have the correct values for L & H. The way that you could use this approach is

```
RAND 49151
POKE 16388, PEEK 16434
POKE 16389, PEEK 16435
NEW
```

For a 64K pack the values of L & H are 255 and 255.

Method 2 to move RAMTOP .

In this method we will use a machine code routine that will do all the moving without using NEW. Thus we can execute a RAMTOP moving routine from within a program, without losing control of the computer (executing NEW from within a program wipes the program out and gives the K cursor).

You can use this program as a start-up program. For now let's assume that the RAMTOP routine is in line 10.

```
10 REM 00000000000000000
20 RAND USR 16514
30 LOAD ""
40 STOP
50 SAVE "64KRAMTOP"
60 RUN
```

If you save the program by ENTERing GOTO 50 in the immediate mode the program will self-start the next time you load it. It will load the next program on the tape automatically, and the proper value of RAMTOP will have been set (provided we insert the machine code routine in line 10 after the REM). If the second program is also self starting then for all practical purposes you will have LOADed only one program.

The machine code routine will do the following.

a. Set new RAMTOP value
b. Move the machine stack
c Set new ERR_SP value

LISTing 1 is the machine code routine. LISTing 2 is a byte-by-byte LISTing in decimal. Simply enter the first line of your program as 1 REM with at least 32 zeros following, then poke in each value starting with 16514. Then enter lines 20 to 60 as needed.

Rand USR 16514 tells the computer to go to memory location 16514 and start executing the machine code instructions until it comes to a number 201 which means return. Since the routine started from Basic it will return to Basic and execute the next basic line. A feature of the ZX-81 operating system is that the first line of Basic always starts at 16509. By making the first line a REM line with machine code instructions, we will always have the first machine code instruction at 16514.

To change the machine code routine to 32K, change 16516 to 191 and
line 50 to
SAVE "32KRAMTOP "

Method 3 to move RAMTOP using COMPUSA Disk Drive

When using the Compusa Floppy Disk Interface RAMTOP moves become very important. Many frustrating hours can pass trying to load a 16K Sinclair program that has a

lot of machine code on to disk. The Compusa DOS (version 5) copies the disk directory into RAM. To ensure that these DIRectories are never written over by Basic, on turning on the power the CDOS lowers RAMTOP by 1388 bytes and resets all pointers. Unfortunately the Compusa DOS (CDOS) doesn't check to see if you have more than 16K ram. If you are using 64K ram you must move RAMTOP as before, move the disk directory, and move the disk directory pointer. Then the CDOS will allow you to operate without getting lost.

The CDOS directory pointer is ALWAYS located at the byte pointed to by RAMTOP and the byte following. Wherever these two bytes point to the CDOS will look for the disk directory. If the directory is not there the system will crash and you will have to power down and then start over again. In a 16K system the pointer & RAMTOP are as follows:

16388 147 RAMTOP points to 31379
16389 122
31379 149 CDOS pointer points to 31381
31380 122
31381 CDOS directory starts here

I use the following locations for RAMTOP when using 64K and 32K packs.

For 64K 16388, 147 RAMTOP at 64147
16389, 250
64147, 149 DIRectory at 64149
64148, 250

For 32K: 16388, 147 RAMTOP at 47763
16389, 186
47763, 149 DIRectory at 47765
47764, 186

These locations put the DIRectories at the top of memory and free up the most RAM for programming. While you could poke in the four new values, execute NEW, and then do a GET DIRectory CDOS command, the following program will do it in machine code and you never give up control of the computer. LISTing 3 is the machine code program. LISTing 4 is a decimal byte-by-byte breakdown that you can poke into a REM statement that has 53 zeros after it. LISTing 5 is the Basic LISTing. This program is for 64K. If you have a 32K pack use LISTing 6 & 7 for the correct values and change line 20 in the Basic program to read: IF PEEK 16389<186 then GOTO 70.

LISTing 5 needs some explanation. Start up the system and ensure that the CDOS is at the 16K setting. Load the RAMTOP routine. Enter in the immediate mode: GOTO 50. Line 50 makes the program a self-starting CDOS program. Line 60 MUST be a GOTO, do not change to RUN. For some unknown reason using RUN in a self-starting CDOS program sends the computer off into never- return land. GOTO 10 keeps everything in control. Line 30 looks for a menu program on the disk. If you don't have a menu then the CDOS will give you an error message and stop.

You should now have a good understanding on how the ZX-81 sets RAMTOP and how you can change it to suite your needs. All of the programs are tested and do work. Good luck and happy computing!

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ZX-81 POKEs & Calls

Use at your own risk

RAND USER 0
clears program & restarts.
RAND USER 681
in FAST mode, prevents report code from display.
RAND USER 757
in FAST mode saves a program without a name
RAND USER 836
in FAST mode, will load a program and STOP it even if it is self starting. Gives a C error code but disregard. Hit LIST and there is the program. Some MC programs initialize from the PRINT buffer and you may not get a LISTing. I have seen only one program that did this [HOT Z-1]. Most start with a RAND USER 16514
RAND USER 930
equivalent to BREAK.
RAND USER963
clears program area & variables (NEW)

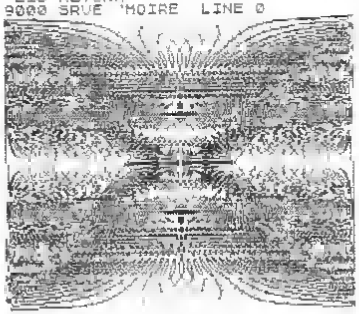
RAND USER 2955
equivalent to "," in PRINT statement.
RAND USER 3086
scrolls up one line.
RAND USER 3292
equivalent to STOP
RAND USER 3875
equivalent to FAST
RAND USER 3883
equivalent to SLOW
POKE 16418, 0
makes a 24 line display (don't scroll or INPUT = CRASH)
POKE 16441, 20
gives a 34 column display (careful, can cause CRASHes)
POKE 16509, N
N=40 to 63. Makes editing hard, line # have letters. N=99 prevents program from running or LISTing, POKE to 0 to restore operation.
POKE 16510, 0
makes first line number 0, can't be edited. Use for Copyright notice. To hide LISTing use the following:- ENTER "1 REM aa"' then POKE 16514, 118 and POKE 16515, 118, LISTing is gone

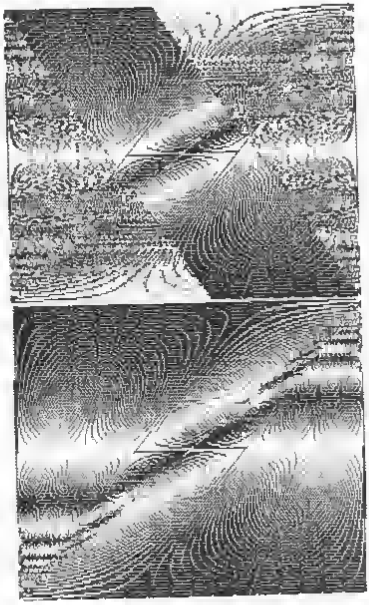
Anthony T. Oresteen

DID YOU TRY THIS?

by Abed Kahale

```
   5 OVER 1  BORDER 0  PAPER 0
INK 2  CLS
  10 GO SUB 100
  15 LET A=2
  20 LET I=INT (RND*7)+1  IF I=A
 THEN GO TO 20
  25 INK I  LET A=I  GO SUB 200
 GO SUB 100  GO SUB 100  GO SUB
200  GO TO 20
 100 FOR X=0 TO 255
 105 PLOT X,0  DRAW 255-X,175  P
LOT 255-X,175  DRAW X-255,-175
 110 NEXT X
 115 RETURN
 200 FOR X=0 TO 255
 205 PLOT X,175  DRAW 255-X,-175
  PLOT 255-X,0  DRAW X-255,175
 210 NEXT X
 215 RETURN
9000 SAVE "MOIRE  LINE 0
```





LISTING 1

```
4082 11FFFF     LD DE,FFFF
4085 2A0440     LD HL,(RMTP)
4088 2B         DEC HL
4089 ED530440   LD (RMTP),DE
408D 014000     LD BC 0040
4090 EDB8       LDDR
4092 EB         EX DE,HL
4093 AF         XOR A
4094 ED52       SBC HL,DE
4096 54         LD D H
4097 5D         LD E L
4098 39         ADD HL,SP
4099 F9         LD SP HL
409A 2A0240     LD HL (ERSP)
409D 19         ADD HL,DE
409E 220240     LD (ERSP),HL
40A1 C9         RET
```

LISTIG 2

```
4082 11            17 16514 )
4083 FF           255 16515 COPY
4084 FF           255 16516 COPY
4085 2A            42 16517 E
4086 04  RMTP       4 16518
4087 40            64 16519 RND
4088 2B            43 16520 F
4089 ED           237 16521 GOSUB
408A 53            83 16522
408B 04  RMTP       4 16523
408C 40            64 16524 RND
408D 01  FLGS       1 16525
408E 40            64 16526 RND
408F 00             0 16527
4090 ED           237 16528 GOSUB
4091 B8           184 16529 s
4092 EB           235 16530 FOR
4093 AF           175 16531 J
4094 ED           237 16532 GOSUB
4095 52            82 16533
4096 54            84 16534
4097 5D            93 16535
4098 39            57 16536 T
4099 F9           249 16537 RAND
409A 2A            42 16538 E
409B 02  ERSP       2 16539
409C 40            64 16540 RND
409D 19            25 16541 ;
409E 22            34 16542 6
409F 02  ERSP       2 16543
40A0 40            64 16544 RND
40A1 C9           201 16545 TAN
```

LISTING 2A

```
0 REM ) COPY COPY ERNDF GO
0 TRNDRND  GOSUB s FOR J GOSU
TTTT RAND ERND;RANDTAN
ANTHONY J ORESTEEN 64K RAM 0

10 RAND USR 16514
20 IF PEEK 16389<255 THEN G
70
30 LOAD ""
40 STOP
50 SAVE "64KRAM"
60 GOTO 10
70 PRINT "RAMTOP ERROR. PLE
RE-START."
```

LISTING 3

```
4082 AF         XOR A
4083 ED737B40   LD (HZET),SP
4087 ED5B7B40   LD DE (HZET)
408B 31FF7F     LD HL,7FFF
408E ED52       SBC HL,DE
4090 44         LD B,H
4091 4D         LD C,L
4092 21FF7F     LD HL 7FFF
4095 11FFFF     LD DE FFFF
4098 EDB8       LDDR
409A 110080     LD DE 8000
409D 2A7B40     LD HL (HZET)
40A0 19         ADD HL,DE
40A1 F9         LD SP HL
40A2 2A0240     LD HL (ERSP)
40A5 19         ADD HL,DE
40A6 220240     LD (ERSP),HL
40A9 2A0440     LD HL (RMTP)
40AC 19         ADD HL,DE
40AD 220440     LD (RMTP),HL
40B0 2155FA     LD HL FA95
40B3 2293FA     LD (FA93),HL
40B6 C9         RET
```

LISTING 4

```
4082 AF           175 16514 J
4083 ED           237 16515 GOSUB
4084 73           115 16516
4085 7B  HZET     123 16517
4086 40            64 16518 RND
4087 ED           237 16519 GOSUB
4088 5B            91 16520
4089 7B  HZET     123 16521
408A 40            64 16522 RND
408B 21            33 16523 5
408C FF           255 16524 COPY
408D 7F           137 16525
408E ED           237 16526 GOSUB
408F 52            82 16527
4090 44            68 16528
4091 4D            77 16529
4092 21            33 16530 5
4093 FF           255 16531 COPY
4094 7F           127 16532
4095 11            17 16533 )
4096 FF           255 16534 COPY
4097 FF           255 16535 COPY
4098 ED           237 16536 GOSUB
4099 B8           184 16537 s
409A 11            17 16538 )
409B 00             0 16539
409C 80           128 16540
409D 2A            42 16541 E
409E 7B  HZET     123 16542
409F 40            64 16543 RND
40A0 19            25 16544 ;
40A1 F9           249 16545 RAND
40A2 2A            42 16546 E
40A3 02  ERSP       2 16547
40A4 40            64 16548 RND
40A5 19            25 16549
40A6 22            34 16550 6
40A7 02  ERSP       2 16551
40A8 40            64 16552 RND
40A9 2A            42 16553 E
40AA 04  RMTP       4 16554
40AB 40            64 16555 RND
40AC 19            25 16556 ;
40AD 22            34 16557 6
40AE 04  RMTP       4 16558
40AF 40            64 16559 RND
40B0 21            33 16560 5
40B1 95           149 16561 0
40B2 FA           250 16562 1F
40B3 22            34 16563 6
40B4 93           147 16564 _
40B5 FA           250 16565 1F
40B6 C9           201 16566 TAN
```

LISTING 5

```
0 REM J GOSUB ??RND GOSUB ?T
05 COPY kGOSUB ???5 COPY k) CC
COPY GOSUB s) E?RND; RAND EF
D;6ANDERND;ERND50 1F 6_ 1F T
N  A ORESTEEN 64K CDOS BOOT

10 RAND USR 16514
20 IF PEEK 16389<250 THEN GOT
70
30 LOAD "A:MENU,P"
40 STOP
50 SAVE "A 64KDOS S,P"
60 GOTO 10
70 PRINT "RAMTOP ERROR, PLEAE
RE-START."
```

LISTING 6

```
4082 AF         XOR A
4083 ED737B40   LD (HZET),SP
4087 ED5B7B40   LD DE (HZET)
408B 21FF7F     LD HL,7FFF
408E ED52       SBC HL,DE
4090 44         LD B H
4091 4D         LD C,L
4092 21FF7F     LD HL,7FFF
4095 11FFBF     LD DE,BFFF
4098 EDB8       LDDR
409A 110040     LD DE,ERNR
409D 2A7B40     LD HL (HZET)
40A0 19         ADD HL,DE
40A1 F9         LD SP HL
40A2 2A0240     LD HL,(ERSP)
40A5 19         ADD HL DE
40A6 220240     LD (ERSP),HL
40A9 2A0440     LD HL,(RMTP)
40AC 19         ADD HL,DE
40AD 220440     LD (RMTP) HL
40B0 2195BA     LD HL,BA95
40B3 2293BA     LD (BA93),HL
40B6 C9         RET
```

LISTING 7

```
4082 AF           175 16514 J
4083 ED           237 16515 GOSUB
4084 73           115 16516
4085 7B  HZET     123 16517
4086 40            64 16518 RND
4087 ED           237 16519 GOSUB
4088 5B            91 16520
4089 7B  HZET     123 16521
408A 40            64 16522 RND
408B 21            33 16523 5
408C FF           255 16524 COPY
408D 7F           127 16525
408E ED           237 16526 GOSUB
408F 52            82 16527
4090 44            68 16528
4091 4D            77 16529
4092 21            33 16530 5
4093 FF           255 16531 COPY
4094 7F           127 16532
4095 11            17 16533 )
4096 FF           255 16534 COPY
4097 BF           191 16535 z
4098 ED           237 16536 GOSUB
4099 B8           184 16537 s
409A 11            17 16538 )
409B 00  ERNR       0 16539
409C 40            64 16540 RND
409D 2A            42 16541 E
409E 7B  HZET     123 16542
409F 40            64 16543 RND
40A0 19            25 16544 ;
40A1 F9           249 16545 RAND
40A2 2A            42 16546 E
40A3 02  ERSP       2 16547
40A4 40            64 16548 RND
40A5 19            25 16549 ;
40A6 22            34 16550 6
40A7 02  ERSP       2 16551
40A8 40            64 16552 RND
40A9 2A            42 16553 E
40AA 04  RMTP       4 16554
40AB 40            64 16555 RND
40AC 19            25 16556 ;
40AD 22            34 16557 6
40AE 04  RMTP       4 16558
40AF 40            64 16559 RND
40B0 21            33 16560 5
40B1 95           149 16561 0
40B2 BA           186 16562 u
40B3 22            34 16563 6
40B4 93           147 16564 _
40B5 BA           186 16565 u
40B6 C9           201 16566 TAN
```

LISTING 9

```
4082 11FFBF     LD DE,BFFF
4085 2A0440     LD HL,(RMTP)
4088 2B         DEC HL
4089 ED530440   LD (RMTP),DE
408D 014000     LD BC,0040
4090 EDB8       LDDR
4092 EB         EX DE HL
4093 AF         XOR A
4094 ED52       SBC HL,DE
4096 54         LD D H
4097 5D         LD E L
4098 39         ADD HL,SP
4099 F9         LD SP HL
409A 2A0240     LD HL (ERSP)
409D 19         ADD HL,DE
409E 220240     LD (ERSP),HL
40A1 C9         RET
```

LISTING 10

```
4082 11            17 16514 )
4083 FF           255 16515 COPY
4084 BF           191 16516 z
4085 2A            42 16517 E
4086 04  RMTP       4 16518
4087 40            64 16519 RND
4088 2B            43 16520 F
4089 ED           237 16521 GOSUB
408A 53            83 16522
408B 04  RMTP       4 16523
408C 40            64 16524 RND
408D 01  FLGS       1 16525
408E 40            64 16526 RND
408F 00             0 16527
4090 ED           237 16528 GOSUB
4091 B8           184 16529 s
4092 EB           235 16530 FOR
4093 AF           175 16531 J
4094 ED           237 16532 GOSUB
4095 52            82 16533
4096 54            84 16534
4097 5D            93 16535
4098 39            57 16536 T
4099 F9           249 16537 RAND
409A 2A            42 16538 E
409B 02  ERSP       2 16539
409C 40            64 16540 RND
409D 19            25 16541 ;
409E 22            34 16542 6
409F 02  ERSP       2 16543
40A0 40            64 16544 RND
40A1 C9           201 16545 TAN
```

32K RAM BOOT

LISTING 8

```
0 REM J GOSUB ??RND GOSUB ??R
05 COPY kGOSUB ???5 COPY k) COP
z GOSUB s) RNDE?RND. RAND ERN
);6ANDERND;6RND50u6_uTAN
A ORESTEEN 32K CDOS BOOT

10 RAND USR 16514
20 IF PEEK 16389<186 THEN GOTO
70
30 LOAD "A MENU,P"
40 STOP
50 SAVE "A 32KDOS,6,P"
60 GOTO 10
70 PRINT "RAMTOP ERROR. PLEASE
RE-START."
```

FRUSTRATED PC USERS FLOOD HELP LINES

by Joan Kealy

Austin, TX newspaper — March 4, 1994

Austin - The exasperated help-line caller said she couldn't get her new Dell computer to turn on. Jay Albinger, a Dell Computer Corp technician, made sure the computer was plugged in and then asked the woman what happened when she pushed the power button.

"I've pushed and pushed on this foot pedal and nothing happens," the woman replied

"Foot pedal?" the technician asked.

"Yes," the woman said, "this little white foot pedal with the ON switch."

The "foot pedal," it turned out, was the computer's MOUSE, a hand-operated device that helps to control the computer's operations.

Personal-computer makers are discovering that it's still a low-tech world out there. While they are finally having great success selling PC's to households, they now have to deal with people to whom monitors and disk drives are as foreign as another language

"It is rather mystifying to get this nice, beautiful machine and not know anything about it," said Ed Shuler, a technician who helps field consumer calls at Dell's headquarters.

"It's going into unfamiliar territory," said Gus Kohas, vice president of consumer service and training for Compaq Computer Corp

Only two years ago, most calls to PC help lines came from techies needing help on complex problems But now, with computer sales to homes exploding as new "multimedia" functions gain mass appeal. PC makers say that as many as 70 percent of their calls come from rank novices

The questions are often so basic that they could have been answered by opening the manual that comes with every machine One woman called Dell's toll-free line to ask how to install batteries in her laptop. When told that the directions were on the first page of the manual, said Steve Smith, Dell's director of technical support, the woman replied angrily, "I just paid $2,000 for this damn thing, and I'm not going to read a book."

Indeed, it seems that these buyers rarely refer to a manual when a phone is at hand. "If there is a book and phone and they're side by side, the phone wins time after time," said Craig McQuilkin, manager of service marketing for AST Research Inc. in Irvine, CA. "It's a phenomenon of people wanting to talk to people."

And do they ever. Compaq's help center in Houston is inundated with some 8,000 consumer calls a day, with inquiries like this one related by technician John Wolf

""A frustrated customer called who said her brand New Contura would not work. She said she had unpacked the unit, plugged it in, opened it up and sat there for 20 minutes waiting for something to happen. When asked what happened when she pressed the switch, she asked, "What power switch?""

Seemingly simple computer features baffle some users. So many people have called to ask where the "any" key is when "Press Any Key" flashes on the screen that Compaq is considering changing the command to "Press Return Key." 0/0

New addition to the **PD Library**, Disk #10 and Disk #11(Manual)

D.U.S. v4.0

by Christian Boisvert

COPY1		Checks & copies 6 blocks at a time, makes up to 4 copies.
COPY3	✓	Checks & copies > 6 blocks at a time, exact memory length , up to 4 copies.
COPY2		FORMATs then copies, copies 5 blocks at a time (Customize before use)
COPY4	✓	FORMATs then copies, exact memory length (Customize before use)
MOVE	✓	Copies one or all selected files in one go.
FORMAT		FORMATs and maps-out bad blocks. (Customize before use)
FASTF	✓	Fast FORMATs previously formatted disks. (Customize before use)
FRESHEN		Reformats without losing files on bad disk.
FFRESH		Freshens without reformat.
MAPOUT	✓	Maps-out bad blocks.
TMAPED		Manual block map-out
RECCAT		Rebuilds glitched CATalog
RECOVR	✓	Recovers erased files if not overwritten.
RECBAD	✓	Recovers blocks from bad disk and copies to another disk.
HEAD	✓	Changes head speed.
TRKSID	✓	Changes and reformats tracks and sides, good for dissimilar disks.
FTRKSD	✓	Fast change of tracks and sides on already formatted disk.
CLENUP		Clears and reformats unused blocks and invalid files.
FCLEAN		Clears unused blocks and invalid files.
ERASE	✓	Erases one or all selected files in one go.
INIT	✓	Erases all files.
CHKDSK		Disk information.
FANALY		File analyzer.
BANAL		Block analyzer.
BEDIT		Block editor.
THIEF		Copies disk name to another.
SORT	✓	Sorts files in alphabetical order.
RENAME		Renames one or all selected files.
COLNAM	✓	Adds color to disk name.
DSKNAM		Edits disk name, not for colored names.
BOOT		AUTOSTART
MINIBT		Boot

Customization
Edit LET A$ = "_" add
L for LarKen
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Abd 3/94

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